

5. Environmental Analysis

5.2 AIR QUALITY

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential for the Town of Yucca Valley General Plan Update (proposed project) to impact air quality in a local and regional context. The analysis in this section is based on buildout of the proposed land use plan; vehicle miles traveled (VMT), provided by Fehr and Peers as modeled using the San Bernardino County Transportation Analysis Model (SBTAM) for trips (origin-destination method) (see Appendix I to this DEIR);¹ electricity use provided by Southern California Edison (SCE), natural gas use provided by the Southern California Gas Company (SoCalGas), waste generation identified for the Town of Yucca Valley by the California Department of Resources Recycling and Recovery (CalRecycle), and water use for the Town based on the Hi-Desert Water District's (HDWD) 2010 Urban Water Management Plan (UWMP). The air quality model output sheets are included in Appendix C of this DEIR.

5.2.1 Environmental Setting

5.2.1.1 Regulatory Setting

Ambient air quality standards (AAQS) have been adopted at state and federal levels for criteria air pollutants. In addition, both the state and federal government regulate the release of toxic air contaminants (TACs). The Town of Yucca Valley is in the Mojave Desert Air Basin (MDAB) and is subject to the rules and regulations imposed by the Mojave Desert Air Quality Management District (MDAQMD) as well as the California AAQS adopted by the California Air Resources Board (CARB) and National AAQS adopted by the United States Environmental Protection Agency (EPA). Federal, state, regional, and local laws, regulations, plans, or guidelines that are potentially applicable to the General Plan Update are summarized below.

Federal and State Laws

Ambient Air Quality Standards

The Clean Air Act (CAA) was passed in 1963 by the U.S. Congress and has been amended several times. The 1970 Clean Air Act amendments strengthened previous legislation and laid the foundation for the regulatory scheme of the 1970s and 1980s. In 1977, Congress again added several provisions, including nonattainment requirements for areas not meeting National AAQS and the Prevention of Significant Deterioration program. The 1990 amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the United States. The CAA allows states to adopt more stringent standards or to include other pollution species. The California Clean Air Act, signed into law in 1988, requires all areas of the state to achieve and maintain the California AAQS by the earliest practical date. The California AAQS tend to be more restrictive than the National AAQS based on even greater health and welfare concerns.

The National and California AAQS are the levels of air quality considered to provide a margin of safety in the protection of the public health and welfare. They are designed to protect "sensitive receptors" most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Both California and the federal government have established health-based AAQS for seven air pollutants, which are shown in Table 5.2-1, *Ambient Air Quality Standards for Criteria Pollutants*. These pollutants include ozone (O₃), nitrogen dioxide (NO₂), carbon monoxide (CO), sulfur dioxide (SO₂), coarse inhalable particulate matter (PM₁₀), fine

¹ SBTAM is a subregional regional transportation model based on the Southern California Association of Government's TransCad model.



5. Environmental Analysis

AIR QUALITY

inhalable particulate matter (PM_{2.5}), and lead (Pb). In addition, the state has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

**Table 5.2-1
Ambient Air Quality Standards for Criteria Pollutants**

Pollutant	Averaging Time	California Standard	Federal Primary Standard	Major Pollutant Sources
Ozone (O ₃)	1 hour	0.09 ppm	*	Motor vehicles, paints, coatings, and solvents.
	8 hours	0.070 ppm	0.075 ppm	
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm	
Nitrogen Dioxide (NO ₂)	Annual Average	0.030 ppm	0.053 ppm	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.18 ppm	0.100 ppm	
Sulfur Dioxide (SO ₂)	Annual Arithmetic Mean	*	0.030 ppm ²	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm	0.075 ppm ¹	
	24 hours	0.04 ppm	0.14 ppm ²	
Respirable Coarse Particulate Matter (PM ₁₀)	Annual Arithmetic Mean	20 µg/m ³	*	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	50 µg/m ³	150 µg/m ³	
Respirable Fine Particulate Matter (PM _{2.5})	Annual Arithmetic Mean	12 µg/m ³	12 µg/m ³⁻³	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	*	35 µg/m ³	
Lead (Pb)	Monthly	1.5 µg/m ³	*	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Quarterly	*	1.5 µg/m ³	
	3-Month Average	*	0.15 µg/m ³	
Sulfates (SO ₄)	24 hours	25 µg/m ³	*	Industrial processes.

5. Environmental Analysis

AIR QUALITY

**Table 5.2-1
Ambient Air Quality Standards for Criteria Pollutants**

Pollutant	Averaging Time	California Standard	Federal Primary Standard	Major Pollutant Sources
Visibility-Reducing Particles	8 hours	ExCo =0.23/km visibility of 10≥ miles ¹	No Federal Standard	Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt.
Hydrogen Sulfide	1 hour	0.03 ppm	No Federal Standard	Hydrogen sulfide (H ₂ S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas, and can be emitted as the result of geothermal energy exploitation.
Vinyl Chloride	24 hour	0.01 ppm	No Federal Standard	Vinyl chloride (chloroethene), a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents.

Source: CARB 2013.

Notes: ppm: parts per million; $\mu\text{g}/\text{m}^3$: micrograms per cubic meter

¹ When relative humidity is less than 70 percent.

² On June 2, 2010, a new 1-hour SO₂ standard was established and the existing 24-hour and annual primary standards were revoked. The 1971 SO₂ national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

³ On December 14, 2012, EPA lowered the federal primary PM_{2.5} annual standard from 15.0 $\mu\text{g}/\text{m}^3$ to 12.0 $\mu\text{g}/\text{m}^3$. The new annual standard will become effective 60 days after publication in the Federal Register. EPA made no changes to the primary 24-hour PM_{2.5} standard or to the secondary PM_{2.5} standards.

* Standard has not been established for this pollutant/duration by this entity.



Air Pollutants of Concern

Criteria Air Pollutants

The pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state law. Air pollutants are categorized as primary or secondary pollutants. Primary air pollutants are emitted directly from sources. CO, volatile organic compounds (VOC), NO₂, SO₂, PM₁₀, PM_{2.5}, and lead are primary air pollutants. Of these, CO, SO₂, NO₂, PM₁₀, and PM_{2.5} are "criteria air pollutants," which means that AAQS have been established for them. VOC and oxides of nitrogen (NO_x) are air pollutant precursors that form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. O₃ and NO₂ are the principal secondary pollutants.

5. Environmental Analysis

AIR QUALITY

A description of each of the primary and secondary criteria air pollutants and their known health effects is presented below.

Carbon Monoxide (CO) is a colorless, odorless gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. CO is a primary criteria air pollutant. CO concentrations tend to be the highest during winter mornings with little to no wind, when surface-based inversions trap the pollutant at ground levels. The highest ambient CO concentrations are generally found near traffic-congested corridors and intersections. The primary adverse health effect associated with CO is interference with normal oxygen transfer to the blood, which may result in tissue oxygen deprivation (SCAQMD 2005; EPA 2012). The MDAB is designated under the California and National AAQS as being in attainment of CO criteria levels (CARB 2013).

Volatile Organic Compounds (VOCs)/Reactive Organic Gases are compounds composed primarily of atoms of hydrogen and carbon. Internal combustion associated with motor vehicle usage is the major source of VOCs. Other sources of VOCs include evaporative emissions associated with the use of paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols (SCAQMD 2005). There are no ambient air quality standards established for VOCs. However, because they contribute to the formation of O₃, the MDAQMD has established a significance threshold for this pollutant.

Nitrogen Oxides (NO_x) are a by-product of fuel combustion and contribute to the formation of ground-level O₃, PM₁₀, and PM_{2.5}. The two major forms of NO_x are nitric oxide (NO) and nitrogen dioxide (NO₂). NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. The principal form of NO₂ produced by combustion is NO, but NO reacts with oxygen quickly to form NO₂, creating the mixture of NO and NO₂ commonly called NO_x. NO₂ acts as an acute irritant and is more injurious than NO in equal concentrations. At atmospheric concentrations, however, NO₂ is only potentially irritating. NO₂ absorbs blue light; the result is a brownish-red cast to the atmosphere and reduced visibility. NO₂ exposure concentrations near roadways are of particular concern for susceptible individuals, including people with asthma, asthmatics, children, and the elderly. Current scientific evidence links short-term NO₂ exposures, ranging from 30 minutes to 24 hours, with adverse respiratory effects, including airway inflammation in healthy people and increased respiratory symptoms in people with asthma. Also, studies show a connection between breathing elevated short-term NO₂ concentrations and increased visits to emergency departments and hospital admissions for respiratory issues, especially asthma (SCAQMD 2005, EPA 2012). The MDAB is designated an attainment area for NO₂ under the National and California AAQS (CARB 2013).

Sulfur Dioxide (SO₂) is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. It enters the atmosphere as a result of burning high-sulfur-content fuel oils and coal and from chemical processes at chemical plants and refineries. Gasoline and natural gas have very low sulfur content and do not release significant quantities of SO₂. When sulfur dioxide forms sulfates (SO₄) in the atmosphere, together these pollutants are referred to as sulfur oxides (SO_x). Thus, SO₂ is both a primary and secondary criteria air pollutant. At sufficiently high concentrations, SO₂ may irritate the upper respiratory tract. Current scientific evidence links short-term exposures to SO₂, ranging from 5 minutes to 24 hours, with an array of adverse respiratory effects including bronchoconstriction and increased asthma symptoms. These effects are particularly important for asthmatics at elevated ventilation rates (e.g., while exercising or playing.) At lower concentrations and when combined with particulates, SO₂ may do greater harm by injuring lung tissue. Studies also show a connection between short-term exposure and increased visits to emergency departments and hospital admissions for respiratory illnesses, particularly in at-risk populations including children, the elderly, and asthmatics (SCAQMD 2005, EPA 2012). The MDAB is designated attainment under the California and National AAQS (CARB 2013).

Suspended Particulate Matter (PM₁₀ and PM_{2.5}) consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulates are now recognized and regulated. Inhalable coarse particles, or PM₁₀, include particulate matter with an aerodynamic diameter of 10 microns (i.e., 10 millionths of a meter or 0.0004 inch) or less. Inhalable fine particles, or PM_{2.5}, have an aerodynamic diameter of 2.5 microns (i.e., 2.5

5. Environmental Analysis

AIR QUALITY

millionths of a meter or 0.0001 inch) or less. Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. Both PM₁₀ and PM_{2.5} may adversely affect the human respiratory system, especially in people who are naturally sensitive or susceptible to breathing problems. EPA scientific review concluded that PM_{2.5}, which penetrates deeply into the lungs, is more likely than PM₁₀ to contribute to health effects and at concentrations that extend well below those allowed by the current PM₁₀ standards. These health effects include premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, increased respiratory symptoms (e.g., irritation of the airways, coughing, or difficulty breathing). Diesel particulate matter (DPM) is classified by the CARB as a carcinogen. Particulate matter can also cause environmental effects such as visibility impairment,² environmental damage,³ and aesthetic damage⁴ (SCAQMD 2005; EPA 2012). The MDAB is a nonattainment area for PM_{2.5} and PM₁₀ under California and National AAQS (CARB 2013).

Ozone (O₃) is commonly referred to as “smog” and is a gas that is formed when VOCs and NO_x, both by-products of internal combustion engine exhaust, undergo photochemical reactions in the presence of sunlight. O₃ is a secondary criteria air pollutant. O₃ concentrations are generally highest during the summer months when direct sunlight, light winds, and warm temperatures create favorable conditions for the formation of this pollutant. O₃ poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. Breathing O₃ can trigger a variety of health problems including chest pain, coughing, throat irritation, and congestion. It can worsen bronchitis, emphysema, and asthma. Ground-level O₃ also can reduce lung function and inflame the linings of the lungs. Repeated exposure may permanently scar lung tissue. O₃ also affects sensitive vegetation and ecosystems, including forests, parks, wildlife refuges and wilderness areas. In particular, O₃ harms sensitive vegetation, including forest trees and plants during the growing season (SCAQMD 2005; EPA 2012). The MDAB is designated moderate nonattainment under the California AAQS (1-hour and 8-hour) and National AAQS (8-hour) (CARB 2013).

Lead (Pb) is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the EPA's regulatory efforts to remove lead from on-road motor vehicle gasoline, emissions of lead from the transportation sector dramatically declined by 95 percent between 1980 and 1999, and levels of lead in the air decreased by 94 percent between 1980 and 1999. Today, the highest levels of lead in air are usually found near lead smelters. The major sources of lead emissions to the air today are ore and metals processing and piston-engine aircraft operating on leaded aviation gasoline. Once taken into the body, lead distributes throughout the body in the blood and is accumulated in the bones. Depending on the level of exposure, lead can adversely affect the nervous system, kidney function, immune system, reproductive and developmental systems, and the cardiovascular system. Lead exposure also affects the oxygen-carrying capacity of the blood. The lead effects most commonly encountered in current populations are neurological effects in children and cardiovascular effects (e.g., high blood pressure and heart disease) in adults. Infants and young children are especially sensitive to even low levels of lead, which may contribute to behavioral problems, learning deficits, and lowered IQ (SCAMQD 2005; EPA 2012). The MDAB is designated in attainment of the California and National AAQS for lead (CARB 2013). Because emissions of lead are found only in projects that are permitted by MDAQMD, lead is not an air quality of concern for the proposed project.



² PM_{2.5} is the main cause of reduced visibility (haze) in parts of the United States.

³ Particulate matter can be carried over long distances by wind and then settle on ground or water. The effects of this settling include: making lakes and streams acidic; changing the nutrient balance in coastal waters and large river basins; depleting the nutrients in soil; damaging sensitive forests and farm crops; and affecting the diversity of ecosystems.

⁴ Particulate matter can stain and damage stone and other materials, including culturally important objects such as statues and monuments.

5. Environmental Analysis

AIR QUALITY

Toxic Air Contaminants

The public's exposure to air pollutants classified as toxic air contaminants is a significant environmental health issue in California. In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health. The California Health and Safety Code define a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." A substance that is listed as a hazardous air pollutant (HAP) pursuant to Section 112(b) of the federal Clean Air Act (42 United States Code § 7412[b]) is a toxic air contaminant. Under state law, the California Environmental Protection Agency (Cal/EPA), acting through CARB, is authorized to identify a substance as a TAC if it determines that the substance is an air pollutant that may cause or contribute to an increase in mortality or to an increase in serious illness, or may pose a present or potential hazard to human health.

California regulates TACs primarily through Assembly Bill (AB) 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics "Hot Spot" Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an "airborne toxics control measure" for sources that emit designated TACs. If there is a safe threshold for a substance (i.e., a point below which there is no toxic effect), the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions. To date, CARB has established formal control measures for 11 TACs, all of which are identified as having no safe threshold.

Air toxics from stationary sources are also regulated in California under the Air Toxics "Hot Spot" Information and Assessment Act of 1987. Under AB 2588, toxic air contaminant emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment, and if specific thresholds are exceeded, are required to communicate the results to the public in the form of notices and public meetings.

By the last update to the TAC list in December 1999, CARB had designated 244 compounds as TACs (CARB 1999). Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines.

In 1998, CARB identified particulate emissions from diesel-fueled engines as a TAC. Previously, the individual chemical compounds in diesel exhaust were considered TACs. Almost all diesel exhaust particle mass is 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung.

Mojave Desert Air Quality Management District

MDAQMD is the agency responsible for assuring that the National and California AAQS are attained and maintained in the MDAB. MDAQMD is responsible for:

- Adopting and enforcing rules and regulations concerning air pollutant sources.
- Issuing permits for stationary sources of air pollutants.
- Inspecting stationary sources of air pollutants.
- Responding to citizen complaints.
- Monitoring ambient air quality and meteorological conditions.
- Awarding grants to reduce motor vehicle emissions.
- Conducting public education campaigns.

5. Environmental Analysis

Air Quality Management Planning

The MDAQMD is the agency responsible for preparing the air quality management plans (AQMP) for the MDAB. The Town of Yucca Valley is in the Western Mojave Desert Planning Area of the MDAB. MDAQMD has adopted the following attainment plans for nonattainment pollutants that are applicable within the project area (MDAQMD 2011):

Ozone Attainment Plans

- 2008 –Federal 8-Hour Ozone Attainment Plan (Western Mojave Desert Nonattainment Area).
- 2004 –2004 Ozone Attainment Plan (State and Federal).
- 1996 –Triennial Revision to the 1991 Air Quality Attainment Plan.
- 1994 –Reasonable Further Progress Rate-of-Progress Plan.
- 1994 –Post 1996 Attainment Demonstration and Reasonable Further Progress Plan.
- 1991 –1991 Air Quality Attainment Plan.

Particulate Matter Attainment Plans

- 1995 –Mojave Desert Planning Area Federal Particulate Matter Attainment Plan.

Area Designations

The AQMP provides the framework for air quality basins to achieve attainment of the state and federal ambient air quality standards through the State Implementation Plan (SIP). Areas are classified attainment or nonattainment areas for particular pollutants, depending on whether they meet ambient air quality standards. Severity classifications for ozone nonattainment range in magnitude from marginal, moderate, and serious to severe and extreme. The attainment status for the MDAB is shown in Table 5.2-2.



Table 5.2-2
Attainment Status of Criteria Pollutants in the Mojave Desert Air Basin

Pollutant	State	Federal
Ozone – 1-hour ¹	Nonattainment (Severe 17)	No Federal Standard
Ozone – 8-hour ¹	Nonattainment (Severe 17)	Nonattainment (Severe 17)
PM ₁₀	Nonattainment	Nonattainment
PM _{2.5}	Nonattainment	Unclassified/Attainment
CO	Attainment	Attainment
NO ₂	Attainment/Unclassified	Attainment/Unclassified
SO ₂	Attainment/Unclassified	Attainment/Unclassified
Lead	Attainment	Attainment
All others	Attainment/Unclassified	Attainment/Unclassified

Source: CARB 2013a.

¹ Because the Western Mojave Desert Planning Area will not attain the 8-hour ozone standard by 2010 (Moderate), MDAQMD has requested redesignation to a Severe-17 nonattainment area, requiring attainment of the federal 8-hour ozone standard 2021 deadline.

5. Environmental Analysis

AIR QUALITY

5.2.1.2 Existing Setting

Mojave Desert Air Basin

The project site lies within the MDAB. The MDAQMD has jurisdiction over the desert portion of San Bernardino County and the far eastern end of Riverside County. This region includes the incorporated communities of Adelanto, Apple Valley, Barstow, Blythe, Hesperia, Needles, Twentynine Palms, Victorville, and Yucca Valley. This region also includes the National Training Center at Fort Irwin, the Marine Corps Air Ground Combat Center, the Marine Corps Logistics Base, the eastern portion of Edwards Air Force Base, and a portion of the China Lake Naval Air Weapons Station.

Topography and Climate

The MDAB is an assemblage of mountain ranges interspersed with long broad valleys that often contain dry lakes. Many of the lower mountains that dot the vast terrain rise from 1,000 to 4,000 feet above the valley floor. Prevailing winds in the MDAB are out of the west and southwest. These prevailing winds are due to the proximity of the MDAB to coastal and central regions and the blocking nature of the Sierra Nevada to the north; air masses pushed onshore in southern California by differential heating are channeled through the MDAB.

The MDAB is separated from the southern California coastal and central California valley regions by mountains (highest elevation approximately 10,000 feet), whose passes form the main channels for these air masses. Antelope Valley is bordered in the northwest by the Tehachapi Mountains, separated from the Sierra Nevada in the north by the Tehachapi Pass (3,800 ft elevation). Antelope Valley is bordered in the south by the San Gabriel Mountains, bisected by Soledad Canyon (3,300 ft). The Mojave Desert is bordered in the southwest by the San Bernardino Mountains, separated from the San Gabriels by the Cajon Pass (4,200 ft). A lesser channel lies between the San Bernardino Mountains and the Little San Bernardino Mountains (Morongo Valley).

The Palo Verde Valley portion of the Mojave Desert lies in the low desert, at the eastern end of a series of valleys (notably the Coachella Valley), whose primary channel is the San Geronio Pass (2,300 ft) between the San Bernardino and San Jacinto Mountains. During the summer the MDAB is generally influenced by a Pacific subtropical high cell that sits off the coast, inhibiting cloud formation and encouraging daytime solar heating. The MDAB is rarely influenced by cold air masses moving south from Canada and Alaska, because these frontal systems are weak and diffuse by the time they reach the desert. Most desert moisture arrives from infrequent warm, moist, and unstable air masses from the south.

The MDAB averages between three and seven inches of precipitation per year (from 16 to 30 days with at least 0.01 inches of precipitation). The MDAB is classified a dry-hot desert climate, with portions classified as dry-very hot desert, to indicate at least three months have maximum average temperatures over 100.4° F (MDAQMD 2011).

The climatological station nearest to the project site is the Joshua Tree Monitoring Station (ID 044405). The average low is reported at 35.8°F in December while the average high is 101.1°F in July. Rainfall averages 4.69 inches per year in the project area (WRCC 2013).

Existing Ambient Air Quality

Existing levels of ambient air quality and historical trends and projections in the vicinity of the project site and project area are best documented by measurements made by MDAQMD. The air quality monitoring station closest to the project is the Joshua Tree National Monument Monitoring Station. Because this station only monitors O₃, data from the Victorville Monitoring Station was obtained. Data from these stations are summarized in Table 5.2-3. The data show that the area regularly exceeds the state and federal eight-hour and one hour O₃ standards. The state PM₁₀ standard is regularly exceeded. The CO, SO₂, NO₂, and PM_{2.5} standards have not been exceeded in the last five years in the project vicinity.

5. Environmental Analysis

AIR QUALITY

**Table 5.2-3
Ambient Air Quality Monitoring Summary**

Pollutant/Standard	Number of Days Threshold Were Exceeded and Maximum Levels during Such Violations				
	2007	2008	2009	2010	2011
Ozone (O₃)¹					
State 1-Hour ≥ 0.09 ppm	37	36	24	19	21
State 8-hour ≥ 0.07 ppm	108	108	90	90	90
Federal 8-Hour > 0.075 ppm	81	72	59	53	56
Max. 1-Hour Conc. (ppm)	0.129	0.140	0.121	0.119	0.121
Max. 8-Hour Conc. (ppm)	0.107	0.110	0.104	0.106	0.105
Carbon Monoxide (CO)²					
State 8-Hour > 9.0 ppm	0	0	0	0	0
Federal 8-Hour ≥ 9.0 ppm	0	0	0	0	0
Max. 8-Hour Conc. (ppm)	1.61	1.04	1.14	5.17	1.51
Nitrogen Dioxide (NO₂)²					
State 1-Hour ≥ 0.18 ppm	0	0	0	0	0
Max. 1-Hour Conc. (ppm)	0.071	0.074	0.064	0.137	0.075
Sulfur Dioxide (SO₂)²					
State 1-Hour ≥ 0.04 ppm	0	0	0	0	0
Max. 1-Hour Conc. (ppm)	0.005	0.002	0.005	0.007	0.007
Coarse Particulates (PM₁₀)²					
State 24-Hour > 50 µg/m ³	4	2	1	0	0
Federal 24-Hour > 150 µg/m ³	1	2	1	0	0
Max. 24-Hour Conc. (µg/m ³)	358.0 ³	285.5 ³	307.2 ³	49.0	110.2
Fine Particulates (PM_{2.5})²					
Federal 24-Hour > 35 µg/m ³	0	0	0	0	0
Max. 24-Hour Conc. (µg/m ³)	28.0	19.0	20.0	20.0	16.0

Source: CARB 2013b.

ppm: parts per million; µg/m³: or micrograms per cubic meter.

¹ Data obtained from the Joshua Tree National Monument Monitoring Station.

² Data obtained from the Victorville Monitoring Station.

³ Data may include an exceptional event (e.g., wildfire).



Existing Criteria Air Pollutant Emissions Inventory

An existing emissions inventory of the Town of Yucca Valley was conducted based on the existing land uses and is shown in Table 5.2-4. The existing criteria air pollutant emissions were calculated using OFFROAD2007, EMFAC2011, and data from SoCalGas.

5. Environmental Analysis

AIR QUALITY

Table 5.2-4
Existing Town of Yucca Valley Criteria Air Pollutant Emissions Inventory

Sector	Existing, 2012, Criteria Air Pollutants (tons/year)					
	VOC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Transportation ¹	97	421	1,425	2	34	19
Area – Landscaping ²	2	1	30	<1	<1	<1
Area – Construction ²	2	13	9	<1	1	1
Energy ³	2	16	9	<1	1	1
Existing Land Uses Total	103	452	1,472	2	36	21

¹ EMFAC2011 based on daily VMT provided by Fehr and Peers based on 2012 emission rates. Transportation sector includes the full trip length for external-internal trips. VMT per year based on a conversion of VMT x 347 days per year to account for less travel on weekend, consistent with CARB statewide GHG emissions inventory methodology (CARB 2008).

² OFFROAD2007. Estimated based on population (Landscaping) and employment (Light Commercial Equipment) for Yucca Valley as a percentage of San Bernardino County. Estimated based on housing permit data for San Bernardino and Yucca Valley from the US Census. Daily offroad construction emissions multiplied by 347 days/year to account for reduced/limited construction activity on weekends and holidays. Excludes fugitive emissions from construction sites and wood-burning fireplaces. Various industrial and commercial processes (e.g., manufacturing, dry cleaning) allowed under the proposed Land Use Plan of the General Plan Update would require permitting and would be subject to further study pursuant to MDAQMD Regulation XIII, New Source Review. Because the nature of those emissions cannot be determined at this time and they are subject to further regulation and permitting, they will not be included in the table because they would be speculative.

³ Based on a three-year average (2009–2011) provided by SoCal Gas. Nonresidential includes direct access customers, county facilities, and other district facilities within the Town boundaries.

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardiorespiratory diseases.

Residential areas are also considered sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Other sensitive receptors include retirement facilities, hospitals, and schools. Recreational land uses are considered moderately sensitive to air pollution, although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial, commercial, retail, and office areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, since the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the public.

5.2.2 Thresholds of Significance

CEQA Appendix G Thresholds

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

- AQ-1 Conflict with or obstruct implementation of the applicable air quality plan.
- AQ-2 Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

5. Environmental Analysis

- AQ-3 Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).
- AQ-4 Expose sensitive receptors to substantial pollutant concentrations.
- AQ-5 Create objectionable odors affecting a substantial number of people.

Mojave Desert Air Quality Management District Thresholds

The analysis of the proposed project’s air quality impacts follows the guidance and methodologies recommended in MDAQMD’s *CEQA and Federal Conformity Guidelines* (2011). CEQA allows the significance criteria established by the applicable air quality management or air pollution control district to be used to assess impacts of a project on air quality. MDAQMD has established thresholds of significance for regional air quality emissions for construction activities and project operation.

Consistency with Air Quality Management Plans

MDAPCD requires a consistency evaluation with adopted federal and state AQMPs. If a project is deemed consistent with the existing land use plan, it is considered consistent with the AQMPs. Zoning changes, specific plans, general plan amendments, and similar land use plan changes that do not increase dwelling unit density, do not increase vehicle trips, and do not increase vehicle miles traveled are also deemed to not exceed this threshold (MDAQMD 2011).

Regional Significance Thresholds

MDAPCD’s significance criteria are shown in Table 5.2-5. The thresholds in this table are applied to both construction and operational phases of the project regardless of whether they are stationary or mobile sources, resulting in a conservative estimate of air quality impacts of the project. Projects with phases shorter than one year (e.g., construction activities) should be compared to the daily value.



Table 5.2-5
MDAQMD Regional Significance Thresholds

Air Pollutant	Annual	Daily
Reactive Organic Gases (ROGs)/ Volatile Organic Compounds (VOCs)	25 tons/year	137 lbs/day
Carbon Monoxide (CO)	100 tons/year	548 lbs/day
Nitrogen Oxides (NO _x)	25 tons/year	137 lbs/day
Sulfur Oxides (SO _x)	25 tons/year	137 lbs/day
Coarse Inhalable Particulates (PM ₁₀)	15 tons/year	82 lbs/day
Fine Inhalable Particulates (PM _{2.5})	15 tons/year	82 lbs/day

Source: MDAQMD 2011.

Notes:

Lead and hydrogen sulfide are not air quality pollutants of concern for most projects and are typically generated by industrial (MDAQMD permitted) projects only.

Project with phases shorter than one year, including construction activities, can be compared to the daily value.

5. Environmental Analysis

AIR QUALITY

Localized Significance Thresholds

MDAPCD also considers projects that cause or contribute to an exceedance of the California or National AAQS to result in significant impacts. Emissions that do not exceed the daily or annual emission in Table 5.2-4 are considered to result in less than significant localized impacts.

Health Risk

Whenever a project would require use of chemical compounds that have been identified in MDAQMD Regulation XIII, New Source Review, placed on CARB's air toxics list pursuant to Assembly Bill 1807 (AB 1807), Air Contaminant Identification and Control Act (1983); or placed on the EPA's National Emissions Standards for Hazardous Air Pollutants, a health risk assessment (HRA) is required by MDAQMD. In addition, the MDAQMD identified the following project types must be evaluated using significance threshold criteria in Table 5.2-6 when located within the specified distance to an existing or planned (zoned) sensitive receptor land use:

- Industrial projects within 1000 feet;
- Distribution centers (40 or more trucks per day) within 1000 feet;
- Major transportation projects (50,000 or more vehicles per day) within 1000 feet;
- Dry cleaners using perchloroethylene within 500 feet;
- Gasoline dispensing facilities within 300 feet. (MDAQMD 2011)

Conversely, sensitive receptors within these specified distances should also be evaluated for air quality compatibility.

Table 5.2-6
MDAQMD Toxic Air Contaminants Incremental Risk Thresholds

Maximum Individual Cancer Risk	≥ 10 in 1 million
Hazard Index (project increment)	≥ 1.0

Source: MDAQMD 2011.

5.2.3 Environmental Impacts

Methodology

This air quality evaluation was prepared in accordance with the requirements of CEQA to determine if significant air quality impacts are likely to occur in conjunction with future development that would be accommodated by the General Plan Update. MDAQMD has published the *CEQA and Federal Conformity Guidelines* that are intended to provide local governments with guidance for analyzing and mitigating air quality impacts, which were used in this analysis. The Town's criteria air pollutant emissions inventory includes the following sectors:

Transportation: Transportation emissions forecasts were modeled using CARB's EMFAC2011. Model runs were based on daily per capita VMT data provided by Fehr and Peers using the SBTAM regional transportation demand model and 2012 (existing) and 2035 emission rates. The VMT provided in the model includes the full trip length for land uses in the Town (origin-destination approach) and does not include a 50 percent reduction in VMT for external-internal/internal-external trips. Fugitive dust from travel on unpaved roads is based on the EPA's AP 42 emission factors based on travel on unpaved roads provided by Fehr and Peers.

5. Environmental Analysis

Energy: Natural gas use for residential and non-residential land uses in the Town were modeled using data provided by SoCalGas. Natural gas use is based on a three-year average (2011, 2010, and 2009) to account for fluctuation in annual natural use as a result of natural variations in climate. Forecasts are adjusted for increases in population and employment in the Town.

Area Sources: OFFROAD2007 was used to estimate GHG emissions from landscaping equipment, light commercial equipment, and construction equipment in the Town. OFFROAD2007 is a database of equipment use and associated emissions for each county compiled by CARB. Annual emissions were compiled using OFFROAD2007 for the County of San Bernardino for year 2012. In order to determine the percentage of emissions attributable to the Town of Yucca Valley, landscaping and light commercial equipment is estimated based on population (Landscaping) and employment (Light Commercial Equipment) for the Town of Yucca Valley as a percentage of San Bernardino County, while construction equipment use is estimated based on building permit data for the Town of Yucca Valley and County of San Bernardino from data compiled by the U.S. Census. Daily off-road construction emissions are multiplied by 347 days per year to account for reduced/limited construction activity on weekends and holidays. Forecasts are adjusted for increases in population and employment in the Town. Area sources exclude emissions from fireplaces and consumer products in the Town.

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

IMPACT 5.2-1: ***THE GENERAL PLAN UPDATE WOULD BE CONSISTENT WITH THE REGIONAL CONTROL MEASURES, BUT DEVELOPMENT ASSOCIATED WITH THE BUILDOUT OF THE GENERAL PLAN UPDATE WOULD GENERATE MORE GROWTH THAN THE CURRENT GENERAL PLAN. THEREFORE, THE PROJECT WOULD BE INCONSISTENT WITH THE MOJAVE DESERT AIR QUALITY MANAGEMENT DISTRICT'S AIR QUALITY MANAGEMENT PLANS. [THRESHOLD AQ-1]***



Impact Analysis: CEQA requires that general plans be evaluated for consistency with the AQMP. A consistency determination plays an important role in local agency project review by linking local planning and individual projects to the AQMP. It fulfills the CEQA goal of informing decision makers of the environmental efforts of the project under consideration early enough to ensure that air quality concerns are fully addressed. It also provides the local agency with ongoing information as to whether they are contributing to clean air goals in the AQMP. Only new or amended general plan elements, specific plans, and major projects need to undergo a consistency review. This is because the AQMP strategy is based on projections from local general plans.

MDAQM considers a project consistent with the AQMPs if it is consistent with the existing land use plan. Zoning changes, specific plans, general plan amendments and similar land use plan changes that do not increase dwelling unit density, vehicle trips, or increase vehicle miles traveled are also deemed to not exceed this threshold (MDAQMD 2011). Table 5.2-7 compares the population, employment, and daily VMT generation of the General Plan Update compared to the population, employment, and daily VMT generation of the current land use plan.

5. Environmental Analysis

AIR QUALITY

**Table 5.2-7
Comparison of the Proposed General Plan Update to the Current General Plan
Population, Employment, and Daily VMT**

Scenario	Current General Plan (Post 2035)	General Plan Update (Post 2035)	Change from Current General Plan	Percent Change from the Current General Plan
Population	62,223	64,565	2,828	4%
Employment	27,370	34,926	7,556	28%
Daily VMT ¹	2,361,433	2,622,318	260,885	11%

VMT: Vehicle Miles Traveled

¹ VMT per service population for the Current General Plan is assumed to be the same as the General Plan Update as identified for 2035 in the SBTAM.

Although individual development projects would be consistent with the control measures/regulations identified in MDAQMD's AQMP, Table 5.2-7 shows that the General Plan Update would generate substantially more growth for the Town than the current general plan. It should be noted that the General Plan Update assumes full theoretical buildout of the Town post-2035, since there is no schedule for when this development would occur. In contrast, the growth projections that are integrated in the AQMPs are based on SCAG's RTP/SCS. Full buildout associated with the General Plan Update is not currently included in the emissions inventory for the MDAB. As identified in Table 5.2-7, the proposed project would not be consistent with the AQMP because buildout of the Town of Yucca Valley under the proposed General Plan Update would exceed the forecasts in the current general plan. Consequently, the General Plan Update would cumulatively contribute to the existing nonattainment designations in the MDAB because these emissions are not included in the current regional emissions inventory for the MDAB. The proposed project would be considered inconsistent with the MDAQMD's AQMPs, resulting in a significant impact in this regard.

IMPACT 5.2-2: CONSTRUCTION ACTIVITIES ASSOCIATED WITH THE BUILDOUT OF THE GENERAL PLAN UPDATE WOULD GENERATE CRITERIA AIR POLLUTANT EMISSIONS THAT EXCEED MOJAVE DESERT AIR QUALITY MANAGEMENT DISTRICT'S REGIONAL SIGNIFICANCE THRESHOLDS AND WOULD CONTRIBUTE TO THE OZONE AND PARTICULATE MATTER NONATTAINMENT DESIGNATIONS OF THE MOJAVE DESERT AIR BASIN. [THRESHOLDS AQ-2 AND AQ-3]

Impact Analysis: Construction activities associated with development that would be accommodated by the General Plan Update would occur over the buildout horizon (post-2035) of the General Plan Update and cause short-term emissions of criteria air pollutants. The primary source of NO_x, CO, and SO_x emissions is the operation of construction equipment. The primary sources of particulate matter (PM₁₀ and PM_{2.5}) emissions are activities that disturb the soil, such as grading and excavation road construction, and building demolition and construction. The primary source of VOC emissions is the application of architectural coating and off-gas emissions associated with asphalt paving. A discussion of health impacts associated with air pollutant emissions generated by construction activities is included under "Air Pollutants of Concern" in section 5.2-1, *Environmental Setting*.

Information regarding specific development projects, soil types, and the locations of receptors would be needed in order to quantify the level of impact associated with construction activity. Due to the scale of development activity associated with theoretical buildout of the General Plan Update, emissions would likely exceed the MDAQMD regional significance thresholds and therefore, in accordance with the MDAQMD methodology, would cumulatively contribute to the nonattainment designations of the MDAB. The MDAB is currently designated nonattainment for O₃ and particulate matter (PM₁₀ and PM_{2.5}). Emissions of VOC and NO_x are precursors to the formation of O₃. In addition, NO_x is a precursor to the formation of particulate matter (PM₁₀ and PM_{2.5}). Therefore, the proposed project would cumulatively contribute to the existing nonattainment designations of the MDAB for O₃, and particulate matter (PM₁₀ and PM_{2.5}).

5. Environmental Analysis

AIR QUALITY

Air quality emissions related to construction must be addressed on a project-by-project basis. For this broad-based General Plan Update, it is not possible to determine whether the scale and phasing of individual projects would result in the exceedance of MDAQMD's short-term regional or localized construction emissions thresholds. An estimate of construction emissions is included in the operational phase regional criteria air pollutant emissions inventory in Impact 5.2-3 below. In addition to regulatory measures (e.g., MDAQMD Regulation XIII for new source review; Regulation II, which includes Rule 201 for a permit to construct and Rule 203 for a permit to operate; Regulation IV, which includes Rules 403 and Rule 403.2 for fugitive dust control, and CARB's airborne toxic control measures), mitigation may include extension of construction schedules and/or use of special equipment. Nevertheless, because of the likely scale and extent of construction activities pursuant to the future development that would be accommodated by the General Plan Update, at least some projects would likely continue to exceed the relevant MDAQMD thresholds. Consequently, construction-related air quality impacts associated with development in accordance with the General Plan Update are deemed significant.

IMPACT 5.2-3: BUILDOUT OF THE PROPOSED LAND USE PLAN WOULD GENERATE ADDITIONAL VEHICLE TRIPS AND AREA SOURCES OF CRITERIA AIR POLLUTANT EMISSIONS THAT EXCEED MOJAVE DESERT AIR QUALITY MANAGEMENT DISTRICT'S REGIONAL SIGNIFICANCE THRESHOLDS AND WOULD CONTRIBUTE TO THE OZONE AND PARTICULATE MATTER NONATTAINMENT DESIGNATIONS OF THE MOJAVE DESERT AIR BASIN. [THRESHOLDS AQ-2 AND AQ-3]

Impact Analysis: For the purpose of the following analysis, it is important to note that, based on the requirements of CEQA, this analysis is based on a comparison of the General Plan update land use map to existing land uses and not to the current General Plan land use map, from which there is little variation (see Chapter 7, *Alternatives to the Proposed Project*).

It is also important to note that the General Plan Update is a regulatory document that sets up the framework for future growth and development and does not directly result in development in and of itself. Before any development can occur in the Town, all such development is required to be analyzed for conformance with the General Plan, zoning requirements, and other applicable local and state requirements; comply with the requirements of CEQA; and obtain all necessary clearances and permits.

The General Plan Update guides growth and development within the Town of Yucca Valley by designating land uses in the proposed land use plan and through implementation of the goals and policies of the General Plan Update. New development would increase air pollutant emissions in the Town and contribute to the overall emissions inventory in the MDAB. A discussion of health impacts associated with air pollutant emissions generated by operational activities is included in the Air Pollutants of Concern discussion in section 5.2-1, *Environmental Setting*.

The proposed project sets the direction for the development of residential and non-residential land uses within developed and undeveloped portions of the Town. Theoretical buildout of the General Plan Update would result in an increase in land use intensity in the Town, as shown in Table 3-2.

Town of Yucca Valley Emissions Inventory Forecasts

The increase in criteria air pollutant emissions is based on the difference between existing land uses (see Table 4-1, *Existing Land Use Summary*) and land uses associated with buildout of the General Plan Update (see Table 3-2, *Proposed General Plan Land Use Designations and Buildout Projections*) as well as an estimate of population and employment within the Town at 2035 based on SCAG forecasts (SCAG 2012).⁵

⁵ SCAG forecasts in 2035 identify less employment that identified in Table 4-1. Therefore, the SCAG forecast for employment was adjusted based on the relative increase in employment from 2008 to 2035. The increase in employment between 2008 to



5. Environmental Analysis

AIR QUALITY

As shown in Table 5.2-8, theoretical buildout of the General Plan Update would generate long-term emissions that exceed the daily MDAQMD thresholds for all criteria pollutants except SO_x . Emissions of VOC and NO_x are precursors to the formation of O_3 . In addition, NO_x is a precursor to the formation of particulate matter (PM_{10} and $PM_{2.5}$). Consequently, emissions of VOC and NO_x that exceed the MDAQMD regional significance thresholds would contribute to the O_3 nonattainment designation of the MDAB, while emissions of NO_x , PM_{10} , and $PM_{2.5}$ that exceed the MDAQMD regional significance thresholds would contribute to the particulate matter (PM_{10} and $PM_{2.5}$) nonattainment designation of the MDAB.

Implementation of the General Plan policies and implementation actions would reduce impacts to the extent feasible. For example, Policy C1-20 would require future development to pave roadways that would serve 500 or more daily trips unless paving of that facility is considered infeasible by the Town, there is no funding for the improvement, or when the majority of the residents on that facility desire it to be unpaved. In addition, Policy C1-21 identifies that it is a policy of the Town to pursue funding to pave unpaved roadways where the traffic volume exceeds 500 daily trips. Nonetheless, operational-related air quality impacts associated with future development that would be accommodated by the General Plan Update are significant.

2035 identified by SCAG was added to the baseline employment identified in Table 4-1.

5. Environmental Analysis

AIR QUALITY

**Table 5.2-8
Yucca Valley Criteria Air Pollutant Emissions Inventory Forecast**

Sector	Existing Land Uses in 2035 Criteria Air Pollutants (tons/year)					
	VOC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Transportation ¹	32	115	437	2	24	10
Area – Landscaping ²	2	1	30	<1	<1	<1
Area – Construction ²	2	13	9	<1	1	1
Energy ³	2	16	9	<1	1	1
Existing Land Uses in 2035	37	146	485	2	26	12
Sector	Forecast Year 2035 Criteria Air Pollutants (tons/year)					
	VOC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Transportation ¹	35	126	479	2	26	11
Area – Landscaping ²	2	1	35	<1	<1	<1
Area – Construction ²	2	13	9	<1	1	1
Energy ³	2	19	10	<1	2	2
2035 Land Uses	41	160	533	2	29	13
Increase from Existing in 2035	4	14	49	2	29	13
MDAQMD Threshold	25	25	100	25	15	15
Exceeds MDAQMD Threshold	No	No	No	No	No	No
Sector	General Plan Buildout (Post-2035) Criteria Air Pollutants (tons/year)					
	VOC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Transportation ¹	99	358	1,358	5	94	32
Area – Landscaping ²	6	5	104	<1	1	1
Area – Construction ²	2	13	9	<1	1	1
Energy ³	6	54	31	<1	4	4
General Plan Buildout Land Uses	113	431	1,502	6	99	38
Increase from Existing in 2035	76	285	1,017	4	73	26
MDAQMD Threshold	25	25	100	25	15	15
Exceeds MDAQMD Threshold	Yes	Yes	Yes	No	Yes	Yes

Source: Emissions forecasts estimated based on changes in population (residential energy), employment (nonresidential energy), or service population (transportation).

¹ EMFAC2011 based on daily VMT provided by Fehr and Peers. Transportation sector includes the full trip length for external-internal trips. VMT per year based on a conversion of VMT x 347 days per year to account for less travel on weekend, consistent with CARB statewide GHG emissions inventory methodology (CARB 2008).

Includes fugitive dust from travel on updated roads using EPA's AP 42.

² OFFROAD2007. Estimated based on population (Landscaping) and employment (Light Commercial Equipment) for Yucca Valley as a percentage of San Bernardino County. Estimated based on housing permit data for San Bernardino and Yucca Valley from the US Census. Daily offroad construction emissions multiplied by 347 days/year to account for reduced/limited construction activity on weekends and holidays. Excludes fugitive emissions from construction sites and wood-burning fireplaces. Various industrial and commercial processes (e.g., manufacturing, dry cleaning) allowed under the proposed land use plan of the General Plan Update would require permitting and would be subject to further study pursuant to MDAQMD Regulation XIII, New Source Review. Because the nature of those emissions cannot be determined at this time and they are subject to further regulation and permitting, they will not be included in the table because they would be speculative.

³ Based on a three-year average (2009–2011) provided by SoCal Gas. Nonresidential includes direct access customers, county facilities, and other district facilities within the Town boundaries.

IMPACT 5.2-4: BUILDOUT OF THE YUCCA VALLEY GENERAL PLAN COULD RESULT IN NEW SOURCES OF CRITERIA AIR POLLUTANT EMISSIONS AND/OR TOXIC AIR CONTAMINANTS PROXIMATE TO EXISTING OR PLANNED SENSITIVE RECEPTORS. [THRESHOLD AQ-4]

Impact Analysis: Operation of new land uses, consistent with the land use plan of the General Plan Update, would generate new sources of criteria air pollutants and TACs.



5. Environmental Analysis

AIR QUALITY

Localized Significance Thresholds

MDAQMD considers projects that cause or contribute to an exceedance of the California or National AAQS to result in significant impacts. Information regarding specific development projects, soil types, and the locations of receptors would be needed in order to quantify the level of impact associated with future development projects. Due to the scale of development activity associated with theoretical buildout of the General Plan Update, emissions could exceed the MDAQMD regional significance thresholds and therefore, in accordance with the MDAQMD methodology, may result in significant localized impacts. Air quality emissions would be addressed on a project-by-project basis. For this broad-based General Plan Update, it is not possible to determine whether the scale and phasing of individual projects would result in the exceedance of MDAQMD's localized emissions thresholds. Nevertheless, because of the likely scale of future development that would be accommodated by the General Plan Update, at least some projects would likely exceed the relevant MDAQMD thresholds.

Toxic Air Contaminants

Operation of new land uses, consistent with the General Plan Update, could also generate new sources TACs within the Town from various industrial and commercial processes (e.g., manufacturing, dry cleaning). Land uses that have the potential to generate substantial stationary sources of emissions that would require a permit from MDAQMD include industrial land uses, such as chemical processing facilities, dry cleaners, and gasoline-dispensing facilities. In addition to stationary/area sources of TACs, warehousing operations could generate a substantial amount of diesel particulate matter emissions from off-road equipment use and truck idling. New land uses in the Town that generate trucks trips (including trucks with transport refrigeration units) could generate an increase in DPM that would contribute to cancer and noncancer health risk in the MDAB. These new land uses could be near existing sensitive receptors within the Town. Stationary sources of emissions would be controlled by MDAQMD through permitting and would be subject to further study and health risk assessment prior to the issuance of any necessary air quality permits under MDAQMD Regulation XIII, New Source Review. Because the nature of those emissions cannot be determined at this time and they are subject to further regulation and permitting, they will not be addressed further in this analysis but are considered a potentially significant impact of the General Plan Update. MDAQMD identifies the following project types (and associated buffer distance) that would require further evaluation to ensure that sensitive receptors would not be exposed to substantial pollutant concentrations:

- Industrial projects within 1000 feet;
- Distribution centers (40 or more trucks per day) within 1000 feet;
- Major transportation projects (50,000 or more vehicles per day) within 1000 feet;
- Dry cleaners using perchloroethylene within 500 feet;
- Gasoline dispensing facilities within 300 feet. (MDAQMD 2011)

Implementation of the following General Plan implementation actions would ensure that review of air quality compatibility would be conducted when siting receptors near major sources.

- | | |
|--------|---|
| OSC 41 | Amend the Development Code to identify land use sources of toxic air contaminants and adopt standards for the regulation of location and protection of sensitive receptors from excessive and hazardous emissions. |
| OSC 44 | Require all projects that have the potential to generate significant levels of air pollution to provide detailed impact analyses and design mitigation that incorporates the most advanced technological methods available. Prior to the issuance of construction permits, the Town shall review and determine the effectiveness of proposed mitigation measures and set additional measures as needed. |

5. Environmental Analysis

LU 5 Amend the development code to create standards addressing appropriate treatments to buffer industrial and commercial uses from residential and other sensitive uses.

However, operation of new sources of emissions near existing or planned sensitive receptors is considered a potentially significant impact of the project.

IMPACT 5.2-5: PLACEMENT OF NEW SENSITIVE RECEPTORS NEAR MAJOR SOURCES OF TOXIC AIR CONTAMINANTS IN THE TOWN OF YUCCA VALLEY COULD EXPOSE PEOPLE TO SUBSTANTIAL POLLUTANT CONCENTRATIONS. [THRESHOLD AQ-4]

Impact Analysis: Because placement of sensitive land uses falls outside CARB jurisdiction, CARB developed and approved the *Air Quality and Land Use Handbook: A Community Health Perspective* (2005) to address the siting of sensitive land uses in the vicinity of freeways, distribution centers, rail yards, ports, refineries, chrome-plating facilities, dry cleaners, and gasoline-dispensing facilities. This guidance document was developed to assess compatibility and associated health risks when placing sensitive receptors near existing pollution sources.

CARB's recommendations on the siting of new sensitive land uses were based on a compilation of recent studies that evaluated data on the adverse health effects ensuing from proximity to air pollution sources. The key observation in these studies is that proximity to air pollution sources substantially increases both exposure and the potential for adverse health effects. There are three carcinogenic toxic air contaminants that constitute the majority of the known health risks from motor vehicle traffic: DPM from trucks and benzene and 1,3 butadiene from passenger vehicles. CARB recommendations for siting new sensitive land uses are based on data that show that localized air pollution exposures can be reduced by as much as 80 percent by following CARB minimum distance separations.

Potential sources of TAC within the Town of Yucca Valley include stationary sources permitted by MDAQMD and roadways with more than 50,000 average daily traffic volumes. The highest forecast volumes on SR-62 at buildout of the General Plan (post-2035) would be 70,440 vehicles per day. No other roadways in the Town at buildout would generate 50,000 vehicles per day or more. The majority of currently permitted sources are minor sources of emissions (e.g., emergency diesel generators, auto body repair and refinishing facilities, gas stations, dry cleaners). Because of the lack of major stationary sources of emission, the potential to expose sensitive receptors to substantial pollutant concentrations from these sources in the Town is low.

MDAQMD identifies the following project types (and associated buffer distance) that would require further evaluation to ensure that sensitive receptors would not be exposed to substantial pollutant concentrations

- Industrial projects within 1000 feet;
- Distribution centers (40 or more trucks per day) within 1,000 feet;
- Major transportation projects (50,000 or more vehicles per day) within 1,000 feet;
- Dry cleaners using perchloroethylene within 500 feet;
- Gasoline dispensing facilities within 300 feet. (MDAQMD 2011)

Implementation of the following General Plan implementation actions would ensure that review of air quality compatibility would be conducted when siting receptors near major sources.

OSC 41 Amend the Development Code to identify land use sources of toxic air contaminants and adopt standards for the regulation of location and protection of sensitive receptors from excessive and hazardous emissions.

LU 5 Amend the development code to create standards addressing appropriate treatments to buffer industrial and commercial uses from residential and other sensitive uses.



5. Environmental Analysis

AIR QUALITY

However, placement of sensitive receptors proximate to the sources above is considered a potentially significant impact of the project.

IMPACT 5.2-6: BUILDOUT OF THE TOWN OF YUCCA VALLEY WOULD NOT EXPOSE A SUBSTANTIAL NUMBER OF PEOPLE TO OBJECTIONABLE ODORS. [THRESHOLD AQ-5]

Impact Analysis: Growth within the Town of Yucca Valley could generate new sources of odors and place sensitive receptors near existing sources of odors. Nuisance odors from land uses in the MDAB are regulated under MDAQMD Rule 402, Nuisance. Major sources of odors include wastewater treatment plants, chemical manufacturing facilities, food processing facilities, agricultural operations, and waste facilities (e.g., landfills, transfer stations, compost facilities).

There are two types of odor impacts: 1) siting sensitive receptors near nuisance odors, and 2) siting new sources of nuisance odors near sensitive receptors. Due to the low-density residential/commercial character of the Town, proposed land uses under the General Plan have a low potential to generate nuisance odors that affect a substantial number of people. The exception to this is the planned HDWD's wastewater treatment plant. As identified in the environmental analysis conducted by the HDWD, the wastewater treatment plan is not forecast to create significant objectionable odors as a result of installation of odor control facilities (HDWD and BOR 2009) Furthermore, the Town's land use plan designates residential areas and industrial areas of the Town to prevent potential mixing of incompatible land use types. Future development would involve minor odor-generating activities, such as lawn mower exhaust and application of exterior paints for building improvement. It should be noted that while restaurants can generate odors, these sources are not typically identified as nuisance odors since they typically do not generate significant odors that affect a substantial number people. Construction activity would require the operation of equipment that may generate exhaust from either gasoline or diesel fuel. Construction and development would also require the application of paints and the paving of roads, which could generate odors. These types and concentrations of odors are typical of developments and are not considered significant air quality impacts.

Furthermore, MDAQMD Rule 402, Nuisance, requires abatement of any nuisance generated by an odor complaint. Because existing sources of odors are required to comply with MDAQMD Rule 402, impacts to siting of new sensitive land uses would be less than significant. Future environmental review for major sources of odors are required to ensure that sensitive land uses are not exposed to nuisance odors. MDAAQMD 402 requires abatement of any nuisance generating an odor complaint.⁶ Consequently, odor impacts associated with the buildout of the General Plan Update would be less than significant.

5.2.4 Relevant General Plan Policies and Implementation Actions

Open Space and Conservation

Open Space and Conservation Element

Policy OSC 6-3	Require low water use, drought resistant landscape planting to reduce water demand.
Policy OSC 6-4	Require new development to incorporate Best Management Practices (BMPs) for water use and efficiency and demonstrate specific water conservation measures.

⁶ Typical abatement includes passing air through a drying agent followed by two successive beds of activated carbon to generate odor-free air.

5. Environmental Analysis

AIR QUALITY

Policy OSC 9-1	Develop, promote, and implement long-term energy efficiency and demand management policies and standards for Town facilities, vehicles, and new development.
Policy OSC 9-2	Support the development of renewable energy generation within the Town, provided that significant adverse environmental impacts associated with such development can be successfully mitigated.
Policy OSC 9-3	Encourage the use of clean and/or renewable alternative energy sources for transportation, heating, and cooling and construction.
Policy OSC 9-4	Encourage the reduction and recycling of household and business waste.
Policy OSC 9-5	Ensure that any planned construction, demolition, addition, alteration, repair, remodel, landscaping, or grading projects divert all reusable, salvageable, and recyclable debris from landfill disposal.
Policy OSC 9-6	Promote use of ride-sharing and mass transit as means of reducing transportation-related energy demand.
Policy OSC 9-7	Encourage development proposals to participate in state, federal, and/or regional solar rebate and incentive programs.
Policy OSC 9-8	Encourage new construction provided for in whole or in part with Town funds, to incorporate passive solar design features, such as daylighting and passive solar heating, where feasible.
Policy OSC 9-9	Promote building design and construction that integrates alternative energy systems, including but not limited to solar, thermal, photovoltaics and other clean energy systems.
Policy OSC 10-1	Participate in the monitoring of all air pollutants of regional concern on a continuous basis.
Policy OSC 10-2	Coordinate air quality planning efforts with other local, regional, and federal agencies.
Policy OSC 10-3	Promote the safe and efficient movement of people and materials into and through the Town as a means of reducing the impact of automobiles on local air quality.
Policy OSC 10-4	Coordinate land use planning efforts to assure that sensitive receptors are reasonably separated from polluting point sources.
Policy OSC 10-5	Provide consistent and effective code enforcement for construction and grading activities to assure ground disturbances do not contribute to blowing sand and fugitive dust emissions.
Policy OSC 11-1	Continue to participate in and support the provisions of the San Bernardino Regional Greenhouse Gas Reduction Plan.
Policy OSC 11-2	Encourage new development to be designed to take advantage of the desert climate through solar orientation, shading patterns, and other green building practices and technologies.
Policy OSC 11-3	Maintain General Plan Land Use, Housing, and Transportation goals and policies to be aligned with, support, and enhance SCAG's Regional Transportation Plan and Sustainable Communities Strategy to achieve reductions in GHG emissions.



5. Environmental Analysis

AIR QUALITY

Open Space and Conservation Implementation Actions

- OSC 26 Update water efficient-landscape guidelines, which address the use of drought-tolerant plant materials and irrigation standards in the Development Code in accordance with State law.
- OSC 36 Participate in the regional energy management and conservation efforts and encourage the expanded use of energy efficient and alternative fuels, buses with bike racks, and other system improvements including infrastructure for alternative energy vehicles that enhance overall energy efficiency and conservation.
- OSC 37 Coordinate with the County to review land use applications proposing to develop solar or windfarms to protect view sheds and scenic resources of the community.
- OSC 38 Continue the Town's efforts on community participation in reducing, reusing, and recycling household and business waste.
- OSC 39 Provide informational materials and non-Town incentive program information to residents regarding available alternative energy and energy efficiency programs and rebates.
- OSC 40 Evaluate the Town's ability to create a program to waive or reduce the permit fees on solar installation projects and promote state, federal, and private rebate programs.
- OSC 41 Amend the Development Code to identify land use sources of toxic air contaminants and adopt standards for the regulation of location and protection of sensitive receptors from excessive and hazardous emissions.
- OSC 42 Actively promote and pursue expansion of an air quality monitoring station within Yucca Valley that monitors all criteria pollutants (O₃, NO_x, SO_x, CO, and PM_{2.5} and PM₁₀).
- OSC 43 Continue to proactively work with the MDAQMD in conjunction with other local and regional agencies in the development and application of air quality regulations.
- OSC 44 Require all projects that have the potential to generate significant levels of air pollution to provide detailed impact analyses and design mitigation that incorporates the most advanced technological methods available. Prior to the issuance of construction permits, the Town shall review and determine the effectiveness of proposed mitigation measures and set additional measures as needed.
- OSC 45 Establish a goal for solar installations on new and existing homes as well as new commercial/industrial development to be achieved before 2020.
- OSC 46 Pursue partnerships with other governmental entities and with private companies and Southern California Edison to establish incentive programs for renewable energy.

Land Use

Land Use Element

- Policy LU 1-1 Encourage infill development to maximize the efficiency of existing and planned public services, facilities, and infrastructure.

5. Environmental Analysis

AIR QUALITY

Policy LU 1-2	Require that adjacent land uses and development types complement one another.
Policy LU 1-9	Encourage infill residential development around public facilities and with pedestrian linkages to encourage walkable residential neighborhoods.
Policy LU 1-19	Encourage the relocation of industrial operations that are not compatible with adjacent uses to areas that are conducive to such operations.
Policy LU 1-22	Attract and retain non-polluting, clean industrial development that expands the economic opportunities in the Town.

Land Use Implementation Actions

LU 5	Amend the development code to create standards addressing appropriate treatments to buffer industrial and commercial uses from residential and other sensitive uses.
LU 13	Coordinate with the Southern California Association of Governments and the Governor's Office of Planning and Research to stay informed of legislation and documentation of the nexus between land use, housing, transportation, and sustainability.

Circulation

Circulation Element

Policy C 1-7	Encourage development designs that integrate multiple modes of access including pedestrian, bicycle, and public transportation.
Policy C 1-9	Require sidewalk improvements concurrent with new development where commercial and school uses are planned and where residential densities exceed two units per acre, or as required by the Planning Commission.
Policy C 1-10	Encourage MBTA to provide enhanced bus service to employment areas outside of the Town, such as the Coachella Valley or other nearby areas in the County of San Bernardino.
Policy C 1-11	Encourage MBTA to work with area religious facilities or other sites where underutilized parking or hours of operation could provide opportunities for implementing shared park-and-ride facilities.
Policy C 1-12	Encourage MBTA to implement regional transportation solutions that reduce vehicle miles traveled and greenhouse gas emissions.
Policy C 1-13	Work with new development to implement MBTA's Transit Guidelines in Project Development (MBTA, 2005) as appropriate.
Policy C 1-14	Encourage employers to support Transportation Demand Management techniques, such as bus transit passes or other measures that reduce the reliance of the single occupant vehicle.
Policy C 1-19	Require traffic calming techniques in residential neighborhoods and in Special Policy Areas to slow and manage traffic volumes as deemed appropriate by the Town Engineer.



5. Environmental Analysis

AIR QUALITY

- Policy C 1-20 Require future development to pave roadways that will serve 500 or more daily trips as noted in [the Yucca Valley General Plan] Table 4-1 unless paving of that facility is considered infeasible by the Town, there is no funding for the improvement, or when the majority of the residents on that facility desire it to be unpaved.
- Policy C 1-21 Pursue funding to pave unpaved roadways where the traffic volume exceeds 500 daily trips unless paving of that facility is infeasible or when the majority of the residents on that facility desire it to be unpaved.
- Policy C 1-22 Minimize dust emissions on existing and new unpaved roads where traffic volumes exceed 500 daily trips.

Circulation Implementation Actions

- C 2 Review and revise the street and traffic impact mitigation fee program.
- C 5 Provide signs and improve trails, bicycle, equestrian, and pedestrian connections consistent with the Town Trails Master Plan and Park and Recreation Master Plan based on available funding.
- C 6 Close gaps in the existing sidewalk network and provide sidewalks adjacent to schools consistent with the Future Sidewalks Map (Figure 4-3 of the 2013 Transportation Study).
- C 7 Update the Park and Recreation Master Plan to include bicycle and pedestrian facilities that are complementary to the connectivity and trails planning identified in the Town's Trails Master Plan.
- C 8 Apply for funding opportunities to improve pedestrian facilities near schools (such as Safe-Routes-To-School (SR2S) funding).
- C 9 Work with MBTA to plan and provide enhanced bus service to employment areas outside of the Town.
- C 10 Coordinate with MBTA and religious facilities to discuss expanding opportunities for implementing park-and-ride facilities.
- C 11 Consult with MBTA for bus stop placement and design.
- C 12 Consult with MBTA on street design to ensure the street accommodates access for a variety of transit options.
- C 13 Work with MBTA to create a program to expand ridership in Yucca Valley.
- C 14 Establish right-of-way landscaping, signage, and lighting requirements and guidelines to provide an attractive, user-friendly, and safe environment for all users.
- C 18 Work with CalTrans to pursue funding for and implement low-cost transportation improvements such as traffic signal coordination where applicable.
- C 19 Pursue funding to pave unpaved roadways where the traffic volume exceeds 500 daily trips.

5. Environmental Analysis

AIR QUALITY

- C 20 Update the development code to require the application of non-toxic soil binder annually to minimize dust emissions on existing and new unpaved roads where traffic volumes exceed 500 daily trips if paving is not feasible.
- C 21 Establish a timeframe and parameters for paving unpaved roadways, consistent with implementation action C 19.
- C 25 Evaluate and prioritize public infrastructure improvements for inclusion in the Town's Capital Improvement Program.

5.2.5 Existing Regulations and Standard Conditions

- MDAQMD Rule 201: Permit to Construct
- MDAQMD Rule 203: Permit to Operate
- MDAQMD Rule 402: Nuisances
- MDAAQMD Rule 403 and 403.2: Fugitive Dust Control
- MDAQMD Regulation XIII, New Source Review
- CARB Airborne Toxics Control Measure (CCR 2840)
- Building Energy Efficiency Standards (Title 24)
- Appliance Energy Efficiency Standards (Title 20)
- Motor Vehicle Standards (AB 1493)

5.2.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.2-6.



Without mitigation, the following impacts would be **potentially significant**:

- Impact 5.2-1 Buildout of the General Plan Update would generate more growth than the current general plan; and therefore, the project would be inconsistent with MDAQMD's Air Quality Management Plans.
- Impact 5.2-2 Construction activities associated with the buildout of the General Plan Update would generate criteria air pollutant emissions that would exceed MDAQMD's regional significance thresholds and would contribute to the ozone and particulate matter nonattainment designations of the MDAB.
- Impact 5.2-3 Buildout of the proposed land use plan would generate additional vehicle trips and area sources of criteria air pollutant emissions that exceed MDAQMD's regional significance thresholds and would contribute to the ozone and particulate matter nonattainment designations of the MDAB.
- Impact 5.2-4 Buildout of the Yucca Valley General Plan could result in new sources of criteria air pollutant emissions and/or toxic air contaminants near existing or planned sensitive receptors.
- Impact 5.2-5 Placement of new sensitive receptors within the Town of Yucca Valley near major sources of toxic air contaminants could expose people to substantial pollutant concentrations.

5. Environmental Analysis

AIR QUALITY

5.2.7 Mitigation Measures

Impact 5.2-1

Mitigation measures incorporated into future development projects and adherence to the General Plan Update policies and implementation actions for operation and construction phases described under Impacts 5.2-2 and 5.2-3 below would reduce criteria air pollutant emissions associated with buildout of the General Plan Update. Goals and policies in the General Plan Update would facilitate continued Town participation/cooperation with MDAQMD and SCAG to achieve regional air quality improvement goals, promotion of energy conservation design and development techniques, encouragement of alternative transportation modes, and implementation of transportation demand management strategies. However, no mitigation measures are available that would reduce impacts associated with inconsistency with the AQMP due to the magnitude of growth and associated emissions that would be generated by the buildout of the Town in accordance with the General Plan Update.

Impact 5.2-2

2-1 If, during subsequent project-level environmental review, construction-related criteria air pollutants are determined to have the potential to exceed the Mojave Desert Air Quality Management District (MDAQMD) adopted thresholds of significance, the Town of Yucca Valley Planning Department shall require that applicants for new development projects incorporate mitigation measures as identified in the CEQA document prepared for the project to reduce air pollutant emissions during construction activities. Mitigation measures that may be identified during the environmental review include but are not limited to:

- Using construction equipment rated by the United States Environmental Protection Agency as having Tier 3 (model year 2006 or newer) or Tier 4 (model year 2008 or newer) emission limits, applicable for engines between 50 and 750 horsepower.
- Ensuring construction equipment is properly serviced and maintained to the manufacturer's standards.
- Limiting nonessential idling of construction equipment to no more than five consecutive minutes.
- Water all active construction areas at least three times daily, or as often as needed to control dust emissions. Watering should be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water should be used whenever possible.
- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer).
- Pave, apply water three times daily or as often as necessary to control dust, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites.
- Sweep daily (with water sweepers using reclaimed water if possible), or as often as needed, all paved access roads, parking areas, and staging areas at the construction site to control dust.

5. Environmental Analysis

AIR QUALITY

- Sweep public streets daily (with water sweepers using reclaimed water if possible) in the vicinity of the project site, or as often as needed, to keep streets free of visible soil material.
- Hydroseed or apply non-toxic soil stabilizers to inactive construction areas.
- Enclose, cover, water three times daily, or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.).

Impact 5.2-3

Goals and policies are included in the General Plan Update that would reduce air pollutant emissions. However, due to the magnitude of emissions generated by the buildout of residential, office, commercial, industrial, and warehousing land uses in the Town, no mitigation measures are available that would reduce impacts below MDAQMD's thresholds.

Impact 5.2-4

2-2 New industrial or warehousing land uses that: 1) have the potential to generate 40 or more diesel trucks per day and 2) are located within 1,000 feet of a sensitive land use (e.g., residential, schools, hospitals, nursing homes), as measured from the property line of the project to the property line of the nearest sensitive use, shall submit a health risk assessment (HRA) to the Town of Yucca Valley Planning Department prior to future discretionary project approval. The HRA shall be prepared in accordance with policies and procedures of the state Office of Environmental Health Hazard Assessment and the Mojave Desert Air Quality Management District. If the HRA shows that the incremental cancer risk exceeds ten in one million (10E-06) or the appropriate noncancer hazard index exceeds 1.0, the applicant will be required to identify and demonstrate that best available control technologies for toxics (T-BACTs) are capable of reducing potential cancer and noncancer risks to an acceptable level, including appropriate enforcement mechanisms. T-BACTs may include, but are not limited to, restricting idling onsite or electrifying warehousing docks to reduce diesel particulate matter, or requiring use of newer equipment and/or vehicles. T-BACTs identified in the HRA shall be identified as mitigation measures in the environmental document and/or incorporated into the site development plan as a component of the proposed project.



Impact 5.2-5

2-3 Applicants for sensitive land uses within the following distances as measured from the property line of the project to the property line of the source/edge of the nearest travel lane, from these facilities:

- Industrial facilities within 1000 feet
- Distribution centers (40 or more trucks per day) within 1,000 feet
- Major transportation projects (50,000 or more vehicles per day) within 1,000 feet
- Dry cleaners using perchloroethylene within 500 feet
- Gasoline dispensing facilities within 300 feet

shall submit a health risk assessment (HRA) to the Town of Yucca Valley prior to future discretionary project approval. The HRA shall be prepared in accordance with policies and procedures of the state Office of Environmental Health Hazard Assessment (OEHHA) and the Mojave Desert Air Quality Management District. The latest OEHHA guidelines shall be used for the analysis, including age sensitivity factors, breathing rates, and body weights appropriate for children age 0 to 6 years. If the HRA shows that the incremental cancer risk exceeds ten in one million (10E-06) or the appropriate

5. Environmental Analysis

AIR QUALITY

noncancer hazard index exceeds 1.0, the applicant will be required to identify and demonstrate that mitigation measures are capable of reducing potential cancer and non-cancer risks to an acceptable level (i.e., below ten in one million or a hazard index of 1.0), including appropriate enforcement mechanisms. Measures to reduce risk may include but are not limited to:

- Air intakes located away from high volume roadways and/or truck loading zones.
- Heating, ventilation, and air conditioning systems of the buildings provided with appropriately sized maximum efficiency rating value (MERV) filters.

Mitigation measures identified in the HRA shall be identified as mitigation measures in the environmental document and/or incorporated into the site development plan as a component of the proposed project. The air intake design and MERV filter requirements shall be noted and/or reflected on all building plans submitted to the Town and shall be verified by the Town's Planning Department.

5.2.8 Level of Significance After Mitigation

Impact 5.2-1

Buildout of the General Plan Update would generate more population and employment growth than the current general plan; therefore, the project would be inconsistent with MDAQMD's Air Quality Management Plans. Mitigation measures incorporated into future development projects and adherence to the General Plan Update policies and implementation actions for operation and construction phases described in Impacts 5.2-2 and 5.2-3 above would reduce criteria air pollutant emissions associated with buildout of the General Plan Update. Goals and policies included in the General Plan Update would facilitate continued Town participation/cooperation with MDAQMD and SCAG to achieve regional air quality improvement goals, promotion of energy conservation design and development techniques, encouragement of alternative transportation modes, and implementation of transportation demand management strategies. However, no mitigation measures are available that would reduce impacts associated with inconsistency with the AQMP due to the magnitude of growth and associated emissions that would be generated by the buildout of the Town in accordance with the General Plan Update. Impact 5.2-1 would remain **Significant and Unavoidable**.

Impact 5.2-2

Construction activities associated with the buildout of the General Plan Update would generate criteria air pollutant emissions that would exceed MDAQMD's regional significance thresholds and would contribute to the ozone and particulate matter nonattainment designations of the MDAB. Goals and policies are included in the General Plan Update that would reduce air pollutant emissions. However, due to the magnitude of emissions generated by future construction activities associated with the buildout of the General Plan Update, no mitigation measures are available that would reduce impacts below MDAQMD's thresholds. Impact 5.2-2 would remain **Significant and Unavoidable**.

Impact 5.2-3

Buildout of the proposed land use plan would generate additional vehicle trips and area sources of criteria air pollutant emissions that exceed MDAQMD's regional significance thresholds and would contribute to the ozone and particulate matter nonattainment designations of the MDAB. Goals and policies are included in the General Plan Update that would reduce air pollutant emissions. However, due to the magnitude of emissions generated by the buildout of residential, office, commercial, industrial, and warehousing land uses in the Town, no mitigation measures are available that would reduce impacts below MDAQMD's thresholds. Impact 5.2-3 would remain **Significant and Unavoidable**.

5. Environmental Analysis

Impact 5.2-4

Buildout of the Yucca Valley General Plan could result in new sources of criteria air pollutant emissions and/or toxic air contaminants near existing or planned sensitive receptors. Goals and policies are included in the General Plan Update that would reduce concentrations of criteria air pollutant emissions and TACs generated by new development.

Review of projects by MDAQMD for permitted sources of air toxics (e.g., industrial facilities, dry cleaners, and gasoline dispensing facilities) would ensure health risks are minimized. Mitigation Measure 2-2 would ensure mobile sources of TACs not covered under MDAQMD permits are considered during subsequent project-level environmental review. Development of individual projects would be required to achieve the incremental risk thresholds established by MDAQMD, and TACs would be less than significant.

However, localized emissions of criteria air pollutants could exceed the MDAQMD regional significance thresholds because of the scale of development activity associated with theoretical buildout of the General Plan Update. For this broad-based General Plan Update, it is not possible to determine whether the scale and phasing of individual projects would result in the exceedance of MDAQMD's localized emissions thresholds. Therefore, in accordance with the MDAQMD methodology, Impact 5.2-4 would remain **Significant and Unavoidable**.

Impact 5.2-5

Placement of new sensitive receptors within the Town of Yucca Valley near major sources of TACs could expose people to substantial pollutant concentrations. Goals and policies are included in the General Plan Update that would reduce concentrations of criteria air pollutant emissions and air toxics generated by new development. Mitigation Measure 2-3 would ensure that placement of sensitive receptors near major sources of air pollution would achieve the incremental risk thresholds established by MDAQMD and Impact 5.2-5 would be less than significant.



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AIR QUALITY

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